Crystal Lakes Diversion Fish Screen Project
Public Draft Environmental Assessment

MONTANA FISH, WILDLIFE & PARKS
REGION 1 FISHERIES DIVISION

August 3, 2009

Draft environmental assessment for the installation of a fish screen on an irrigation diversion on Deep Creek.

PART I. PROPOSED ACTION DESCRIPTION

A. Type of Proposed Action: Montana Fish, Wildlife & Parks seeks to reduce fish loss on the Crystal Lakes irrigation diversion located on Deep Creek by installing an effective fish screen.

B. Estimated Commencement Date: The installation of the fish screen on the Crystal Lakes irrigation diversion is scheduled to occur in September or early October 2009.

C. Name and Location of the Project: This project is referred to as the Crystal Lakes Irrigation Diversion Fish Screen Project, and the purpose of the project is to eliminate fish entrainment into the irrigation system. This project will be constructed on Deep Creek, located approximately 3 miles northeast of the city of Fortine, Montana. Specifically, the project is located within Township 35 North, Range 25 West, Section 20, Lincoln County, Montana (Figure 1). The project will occur entirely on United States Forest land.

D. Project Size (acres affected): Deep Creek is a third order tributary to Fortine Creek, within the Tobacco River Drainage. The current conveyance system consists of a concrete headgate structure, a headgate, approximately 700 feet of 18" corrugated metal pipe (CMP) and 1.5 miles of open ditch. The project proposal is to install a turbulent fountain fish screen approximately 70 feet from the headgate, and bury a 12" return line (approximately 50' long) from the screen back to the stream. We are also proposing to replace an existing 18" culvert with a 36" CMP culvert where the ditch crosses the NFD Road 368.

Developed/Residential – 0 acres

1. Industrial – 0 acres
2. Open space/Woodlands/Recreation – 0 acres
3. Wetlands/Riparian – The Young Creek Irrigation Diversion Fish Screen Project would be located within the present floodplain and riparian area of Young Creek. The total footprint of this project would be less than ¼ acre within pasture-type agricultural land.
4. Floodplain – 1/4 acre
5. Irrigated Cropland – 0 acres
6. Dry Cropland – 0 acres
7. Forestry – 0 acres
8. Rangeland – 0 acres

E. Narrative Summary of the Proposed Action and Purpose of the Proposed Action:

Background

Deep Creek is a 16-km-long tributary to the Tobacco River, which flows into Lake Koocanusa, a trans-boundary (USA-Canada) impoundment on the Kootenai River. The upper portion of Deep Creek, above the project location, is classified as a Rosgen (1996) B-type stream channel, which flows exclusively through USFS land. It has a bankfull discharge, bankfull width, and gradient of 90 cfs, 15 feet and 3-4 %, respectively. The lower portion of Deep Creek is made up of largely degraded C and E stream channel types (Rosgen 1996) that flow through farm and saw mill properties and have a bankfull discharge, bankfull width, and gradient of 110 cfs, 15-30 feet and 1-2 % respectively. Deep Creek originates in a high elevation basin within the Whitefish Mountain Range, and the flow regime consists of a snowmelt runoff freshet generally in late May/early June and a high elevation spring flow throughout the rest of the year. With this type of flow regime, Deep Creek maintains a relatively consistent temperature, rarely exceeding 15 C.

Westslope cutthroat trout (*Oncorhynchus clarki lewisi*), bull trout (*Salvelinus confluentus*), brook trout (*Salvelinus fontinalis),* and rainbow trout (*Oncorhynchus mykiss)* all exist in Deep Creek, but bull trout and westslope cutthroat trout are the primary species upstream of the Crystal Lakes diversion. Bull trout are currently listed as a threatened species on the Endangered Species List for the Kootenai River Drainage. There has not been a confirmed observation of bull trout spawning in Deep Creek; however, anecdotal information suggests that bull trout did spawn in Deep Creek prior to the 1980s.

Purpose

The proposed project would utilize the existing diversion structure and conveyance pipe, and install a turbulent fountain fish screen (Figure 2) to eliminate fish entrainment and decrease screen maintenance on the irrigation system. This project also proposes to replace an inadequate culvert where the irrigation ditch crosses the NFD Road 368 to decrease the potential for erosion. The upgrades to the irrigation diversion would improve the ease of operation of the irrigation diversion, and also reduce the need for periodic maintenance to the existing, partially functioning fish screen and open ditch. The existing diversion provides water for irrigation and fish culture at the Crystal Springs Fish Hatchery, a commercial aquaculture facility.

Proposed Activities

This project would install a functional fish screen near the point of diversion on Deep Creek capable of delivering the legal flow rate and volume of water for the water users on the existing irrigation system in order to prevent fish entrainment. The proposed project would require some ground disturbance during the installation of the fish screen and culvert replacement. The fish screen will be located within the floodplain of Deep Creek and would have a footprint of less than ¼ acre. The turbulent fountain fish screen would be fabricated offsite and transported to the project area. Installation of the fish screen and culvert would require an excavator to accomplish the work. No riparian vegetation would be removed for this project, and all equipment would access the project area using existing roads. The project area is entirely on United States Forest Service land. The project would be completed after the irrigation season of 2009 (September or October).

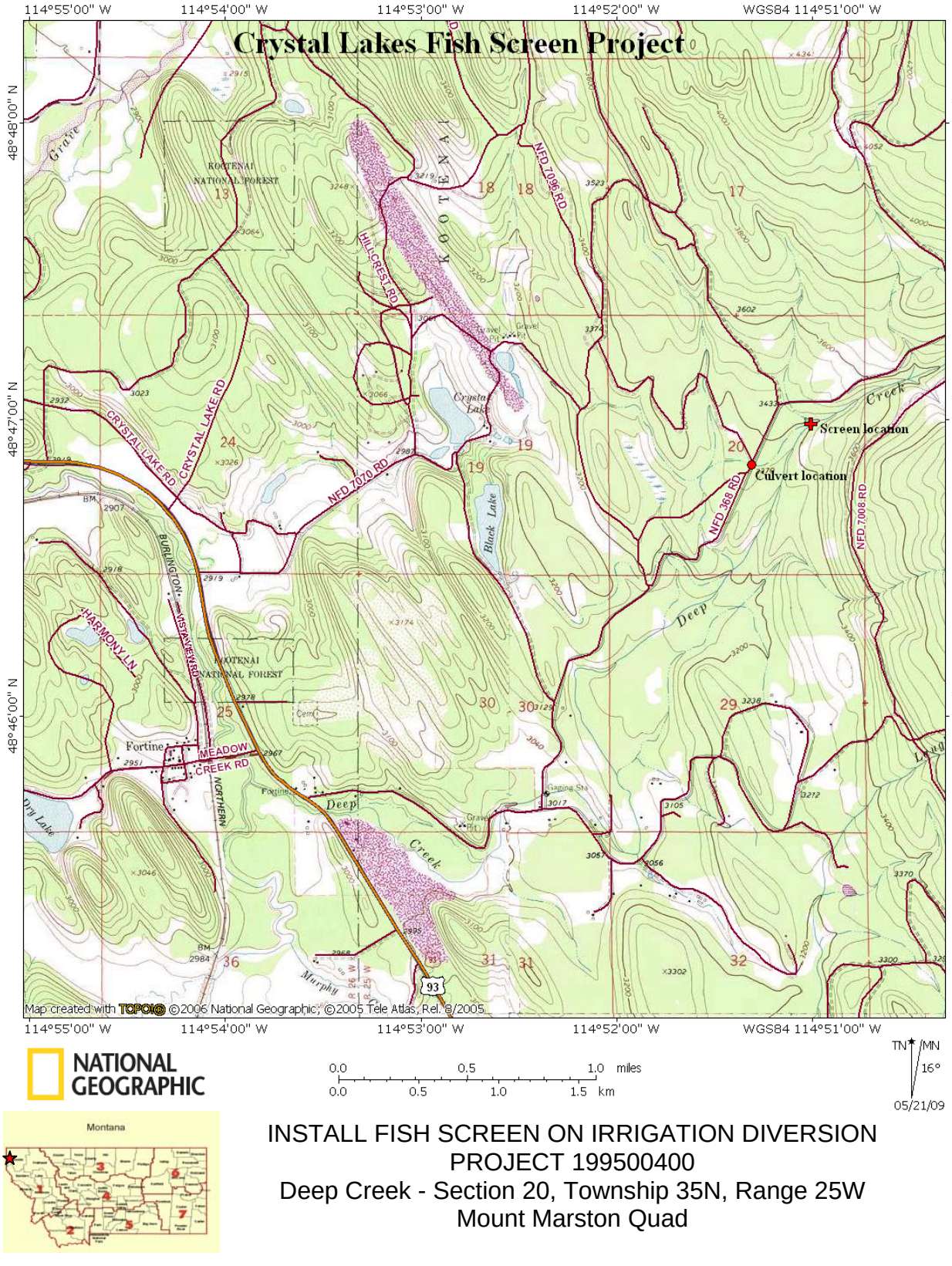

Figure 1. Location of the Crystal Lakes Irrigation Fish Screen Diversion Project.

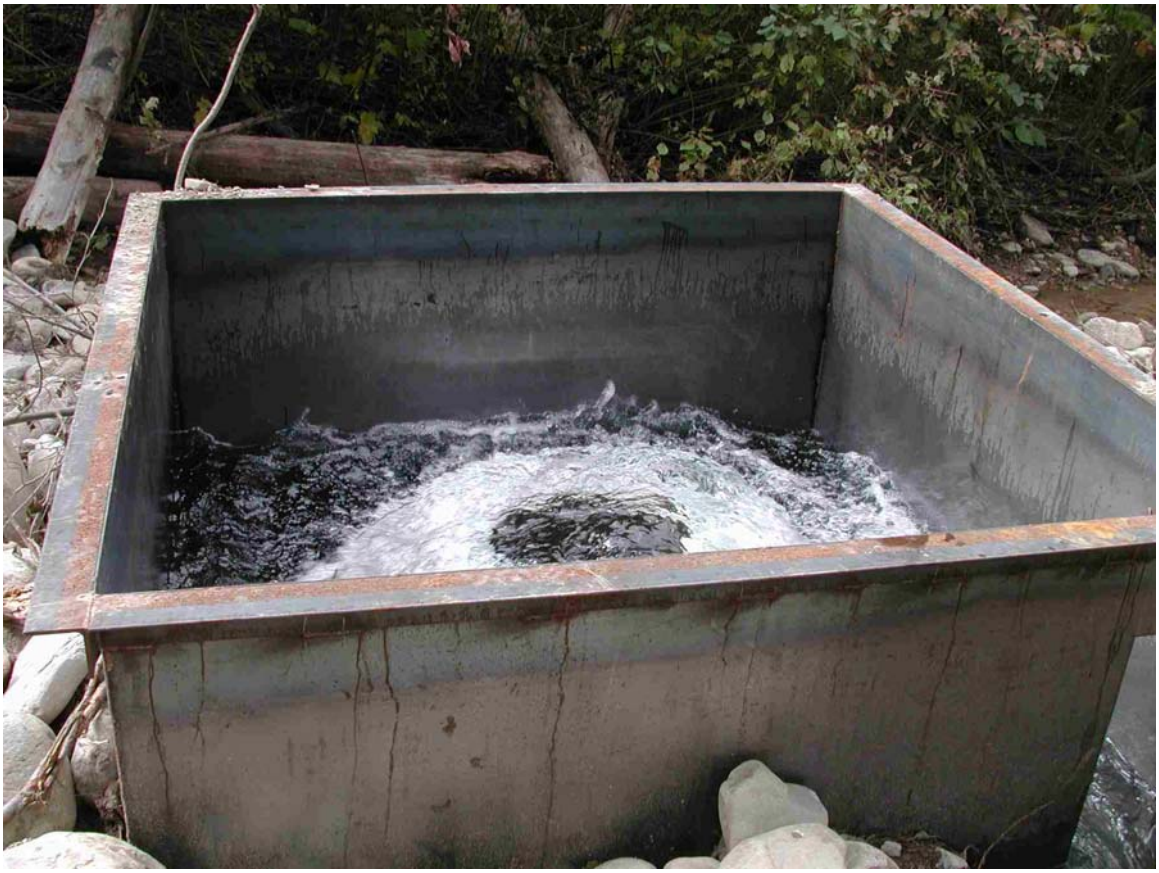

Figure 2. This photograph is a picture of a turbulent fountain fish screen that Montana FWP installed on Libby Creek. The proposed fish screen for the Crystal Lakes project would be similar.

PART II. ENVIRONMENTAL REVIEW

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			1.b.
c. Destruction, covering, or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition, or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				

Comment 1b: There will be some minor disruption of soil to place the 6-by-6' screen box and bury a 12" diameter return pipe back to the stream (approximately 50'). However, the soil disturbance is expected to be relatively short term and minor.

2. WATER Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Discharge into surface water or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?			X			2a.
b. Changes in drainage patterns or the rate amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water-related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				.
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				2j.
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. Will the project affect a designated floodplain?		X				
m. Will the project result in any discharge that will affect federal or state water quality regulations? (Also see 2a)		X				

Comment 2a: The majority of the project will be constructed outside of the stream banks, but excavation to install the fish return line may cause some minor turbidity in Deep Creek. Construction will be done in the fall when the stream is at its lowest level, which should decrease the potential for added turbidity in the water.

Comment 2j: The installation of the fish screen should reduce the debris entering the irrigation lines and thus reduce maintenance and related issues for the water users on this irrigation system.

3. AIR Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Emission of air pollutants or deterioration of ambient air quality? (Also see 13c.)		X				
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns, or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. Will the project result in any discharge, which will conflict with federal or state air quality regulations?		X				

4. VEGETATION Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Changes in the diversity, productivity, or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X			4a.
b. Alteration of a plant community?			X			4b.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				4c.
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X				
f. Will the project affect wetlands or prime and unique farmland?		X				

Comment 4a & 4b: This project would require relatively little ground disturbance (< ¼ acre) to install the fish screen, which would be sited near the existing point of diversion and head gate and within the existing pipe line. The fish return line will require excavation of trench that is approximately 2 feet deep and 50 feet long. This trench will be backfilled to the existing ground contour. The entire project is within a mixed conifer stand with very little understory. The specific location of the ground disturbance will be placed in order to minimize vegetation disturbance. The overall impact on the vegetative community at this site would be minor and not expected to have long-term impacts.

Comment 4c: On May 27, 2009, MFWP contacted the US Fish and Wildlife Service to determine if formal consultation regarding T&E species in the project area was needed. MFWP determined that there would be "no effect" to T&E species, so no formal consultation with the Service is necessary. The US Fish and Wildlife Service has not yet made a determination regarding MFWP's determination.

5. FISH/WILDLIFE Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X			5b.
c. Changes in the diversity or abundance of nongame species?			X			5c.
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?			X			5f.
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest, or other human activity)?		X				
h. Will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat?		X				5f.
i. Will the project introduce or export any species not presently or historically occurring in the receiving location?		X				

Comment 5b & c:

Fish: This project is designed to eliminate entrainment and thus mortality of fish into the existing irrigation system, including all fish species present in Deep Creek. Several species of game fish reproduce and rear in Deep Creek, including westslope cutthroat trout, brook trout, and possibly bull trout. Although bull trout spawning is not documented in Deep Creek, juvenile bull trout do rear for extended periods within this creek. The installation of this fish screen will benefit all fish species in Deep Creek by reducing mortality related to entrainment.

Amphibians: Some amphibians, including spotted frogs (*Rana pretiosa*), western toads (*Bufo boreas*) long-toed salamanders (*Ambystoma macrodactylum*), and Pacific chorus frogs (*Pseudacris regilla*), may currently reside within or around the construction area, and the activity may have a minor impact on these individuals. However, the impact to the amphibian populations within the local area should be short term and minor.

Comment 5f: On May 27, 2009, MFWP contacted the US Fish and Wildlife Service to determine if formal consultation with the Service about T&E species in the project area was needed. MFWP determined that there would be "no effect" to T&E species, so no formal consultation with the

Service is necessary. The US Fish and Wildlife Service has not yet made a determination regarding MFWP's determination. We base this opinion on the following information.

Grizzly bears (*Ursus arctos horribilis),* Canada lynx (*Lynx Canadensis),* and grey wolves (*Canis lupus)* may also be present within the general vicinity of the project area, but no birthing sites are known to occur in the immediate area. The effect of this project on these species is expected to be short term and minor or nonexistent, which would be similar to the effect on other birds and mammals within the area. MFWP based this assessment on the relatively small area of land disturbance and the relatively short period of time required to accomplish the project. This project is not likely to have secondary effects, such as displacement, on any of these species for these same reasons.

Bull trout spawning has not been documented in Deep Creek; however, juvenile bull trout do occupy Deep Creek for extended periods. Overall this project would have beneficial effects on all fish species residing in Deep Creek, including bull trout. The installation of the fish screen would have only minor or nonexistent impacts on bull trout and other fish species due to the fact that any work instream would be completed during the late fall when water levels are lowest and the irrigation season is over, which would reduce instream sedimentation. Almost all ground disturbance would occur in the dry. Therefore any impacts to juvenile bull trout rearing in Deep Creek should be minor to nonexistent.

B. HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Increases in existing noise levels?			X			6a.
b. Exposure of people to severe or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				

Comment 6a: This project would require an excavator to construct this project, which may result in a short-term and minor increase of noise levels during the construction period, which is expected to take approximately 7-14 days to complete.

7. LAND USE **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				

8. RISK/HEALTH HAZARDS **Will the proposed action result in:**	**Impact Unknown**	**None**	**Minor**	**Potentially Significant**	**Can Impact Be Mitigated**	**Comment Index**
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. Will any chemical toxicants be used?		X				

9. COMMUNITY IMPACT Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				9d.
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				

Comment 9d: The existing diversion at this location provides water for irrigation and fish culture at the Crystal Springs Fish Hatchery, a commercial aquaculture facility. The landowner diverts water from Deep Creek at two legal diversion points. This project will be implemented on the uppermost diversion point. The lower diversion point will provide water to the landowner during the construction period for this project. The water used during this period from the lower diversion point will be within the landowner's legal water right and should not substantially inconvenience the landowner's commercial or private interests during the relatively short construction window.

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				
e. Define projected revenue sources?		X				10e.
f. Define projected maintenance costs?		X				10f.

Comment 10e & 10f: This project could cost approximately $40,000 and would be shared among Montana FWP (with funding from Bonneville Power Administration through the Libby Mitigation Project), the landowner (James Smith), and the US Forest Service. Maintenance costs are unknown, but are expected to be relatively low (less than 10% of the total project cost over a ten-year period) and would be the responsibility of the irrigator.

11. AESTHETICS/RECREATION Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?		X				
d. Will any designated or proposed wild or scenic rivers, trails, or wilderness areas be impacted? (Also see 11a, 11c)		X				

12. CULTURAL/HISTORICAL RESOURCES Will the proposed action result in:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Destruction or alteration of any site, structure or object of prehistoric, historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				12c.
d. Will the project affect historic or cultural resources?		X				

Comment 12c: The project site is located within the aboriginal ranges of the Confederated Salish and Kootenai Tribes of the Flathead Nation and the Kootenai Tribe of Idaho. In July 2009, cultural officers for these tribes were contacted. To date there have been no cultural or religious resources identified at the project site. There will be no ground-breaking activities associated with this project and no known cultural or religious ceremonies proposed for the same time this project is proposed. There will be no impacts to historical, cultural, or religious values.

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	Impact Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects that are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard, or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)	X					13f
g. List any federal or state permits required.						13g

Comments 13f: Issues associated with water use and water rights often generate controversy from some people. It is not known if this project would have organized opposition.

Comment 13g: The following permits would be required:

1. Montana Department of Enviroment and Water Quality, 318 Turbidity Exemption Permit.
2. Lincoln County, County Floodplain Development Permit.
3. Montana Fish, Wildlife & Parks SPA 124 Permit and/or a 310 permit from the Lincoln Conservation District.

PART III. ALTERNATIVES

Alternative 1 – No Action

The no-action alternative would allow status quo operation of the irrigation diversion on Deep Creek to continue, which allows fish entrainment into the irrigation system and flow restrictions and erosion of the NFD Road 368. Implementation of this alternative would do little to conserve westslope cutthroat trout and bull trout in the Deep Creek Drainage.

Alternative 2 – Installation of a fish screen and replacement of the existing 18" culvert where the irrigation ditch crosses NFD Road 368 with a 36" culvert. (Proposed Action)

Montana FWP is proposing to install a turbulent fish screen fountain on an existing irrigation diversion on Deep Creek. The project would occur in September or October 2009 and would include the installation of the fish screen and replacement of the exiting 18" culvert with a 36" culvert where ditch crosses the NFD Road 368. The proposed fish screen would also incorporate the existing diversion head gate and 700 feet of pipeline. The project would benefit all fish species residing in Deep Creek, including westslope cutthroat trout and bull trout. It will also allow for better water conveyance in the ditch and decrease potential erosion on NFD Road 368.

Alternative 3 – Installation of a fish screen without replacement of the existing 18" culvert.

This alternative would involve installing a turbulent fish screen fountain on the existing irrigation diversion on Deep Creek. The project would occur in September or October 2009 and would include the installation of the fish screen, but would not replace of the exiting 18" culvert. This alternative would prevent fish from entering the irrigation system, but would not help prevent the culvert at the road crossing from becoming plugged or overwhelmed, and allow the water to overtop the road.

PART IV. EA CONCLUSION

1. **Based on the significance criteria evaluated in this EA, is an EIS required (YES/NO)? If an EIS is not required, explain <u>why</u> the EA is the appropriate level of analysis for this proposed action.**

   MFWP concluded that an EIS is not required for the implementation of this project. MFWP further concludes from the information presented in this document that the proposed activities will have either no impact or a positive impact on the physical and human environment.

2. **Describe the level of public involvement for this project, if any, and given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

The draft environmental assessment (EA) is being distributed to all individuals and groups listed in the cover letter. The EA will be placed on the MFWP web site. Individuals that wish to provide comments to this document or obtain additional information can contact Jim Dunnigan at (406) 293-4161, Ext. 100.

3. **Duration of comment period, if any:**

   There will be a 30-day public comment period for this environmental assessment. Comments will be accepted through Wednesday, September 2, 2009. Submit comments to: Montana Fish, Wildlife & Parks, Attention: Jim Dunnigan, 385 Fish Hatchery Road, Libby, MT 59923, or e-mail to jdunnigan@mt.gov.

4. **Name, title, address and phone number of the person(s) responsible for preparing the EA:** Jim Dunnigan, Fisheries Biologist, MFWP, 385 Fish Hatchery Road, Libby, MT 59923, (406) 293-4161, Ext. 100.